

Abstract of the Disclosure

**ELASTOMER COMPOSITION WHICH CONTAINS INTERCALATED
AND EXFOLIATED CLAY REINFORCEMENT FORMED IN SITU
WITHIN THE ELASTOMER HOST AND ARTICLE, SUCH AS A TIRE,
HAVING AT LEAST ONE COMPONENT THEREOF**

This invention relates to a rubber composition which contains intercalated and at least partially exfoliated organophillic clay reinforcement formed in situ within the elastomer host from a hydrophilic clay. The invention particularly relates to an in situ modification of a hydrophilic clay to compatibilize the clay with a diene-based elastomer. The clay is converted from being hydrophilic in nature to being more hydrophobic in nature and therefore more compatible with the elastomer by bulk blending the elastomer host with a smectite clay, preferably a montmorillonite or hectorite clay, and a hydrocarbyl onium salt, such as for example a quaternary ammonium salt, and particularly in the absence of water addition to the elastomer host. Therefore, such in situ procedure of intercalation and at least partially exfoliation relies upon a bulk blending thereof with an elastomer host at an elevated temperature and under high shear conditions in contrast to pre-intercalating the clay in an aqueous based medium and in contrast to simple low viscosity melt processing of a thermoplastic polymer. The invention also relates to articles of manufacture, including tires, having at least one component comprised of such rubber composition. Such tire component may be, for example, a tire tread.

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